THE

AGRICULTURAL MAGAZINE.

Camden New Jersey, August 28th, 1826.

Notwithstanding the gloomy appearance of crops in the early part of the season, from long and threatened draught, the present prospects, are truly, flattering in this and the neighboring states, from the renovating effects of a series of seasonable and copious showers since the early part of July. The crops of oats as well as those of rye and wheat, have been much more productive than had been contemplated, though in the general, somewhat short of an average crop, but those of corn and buckwheat promise amply to make up the deficiency, also the later crops of grass in a good measure for the shortness of the first. Fruits and the later trucks of almost every description, are very plenty and cheap in the Philadelphia Market. Butter and Cheese are high, the former selling from 20 to 31 cents per lb. and the latter from 8 to 18 cents. Wheat is quoted at from 87 to 91 cents per bushel; Rye, from 65 to 72, Corn from 67 to 74, and Oats from 40 to 45 cents. Wheat Flour has advanced a little within a few days past, and sells for 5 dollars per barrel, but whether it be owing to an apprehended scarcity in some parts of our own country, or to the partial repeal of the Corn laws in England, cannot at this time, be actually determined.

In North Carolina, a distressing draught has prevailed most part of the season, insomuch that an unusual scarcity of bread stuffs is apprehended. In England, and in some parts of the North of Europe the season is stated to be uncommonly dry.

The following letter from the late Joseph Cooper, Esq. of Newton, Gloucester county, on the subject of selecting seeds, &c. has some years since, not only been circulated through the medium of the public papers in many parts of the United States, but also in Europe, and has deservedly excited the attention of Agriculturists on both sides of the Atlantic. And as the developement it contains are the results of practical experiments, we deem their utility worth preserving, by a republication of the article at this time.

COOPER'S POINT, April 17th, 1799.

Respected Friend,

Kind providence having placed me in a situation of life, which

obliged me to procure a living by industry, and that principally in the agricultural line, it has caused me to be a strict observer of the works of nature, with respect to such parts of the vegetable creation as have come under my particular notice, and have been greatly embarrassed at the opinion very generally entertained by farmers and gardeners, that changing seeds, roots and plants, to distant places, or different soils or climates, is beneficial to agriculture; such opinion not agreeing with my observations or practice. This induced me to make many experiments on that head, all of which, in more than forty years' practice, have operated to prove to my satisfaction, that the above opinion is not well founded, and if so, must be extremely prejudicial to agriculture, as it turns the attention of the husbandman from what appears to me one great object, viz. that of selecting seeds and roots for planting or sowing, from such vegetables as come to the greatest perfection, in the soil which he cultivates.

What induced me to make experiments on the subject, was, my observing that all kinds of vegetables were continually varying in their growth, quality, production, and time of maturity. This led me to believe that the great author of nature, has so constructed that wonderful machine, if I may be allowed the expression, as to incline every kind of soil and climate to naturalize all kinds of vegetables, that it will produce at any rate, the better to suit them, if the agriculturists will do their part in selecting the most proper seed. In support of this position, I will subjoin a few facts and experiments, out of a great number, which have all combined to prove the above, to my satisfaction

In or about the year 1746, my father procured the seeds of the long warty squash, which have been kept on the farm ever since, without changing, and are now far preferable to what they were at first. Our early peas were procured from London, the spring before Braddock's defeat (1756) and have been planted successively every season since, on the same place. They have not been changed, and are now preferable to what they were when first obtained. The seed of our asparagus was procured from New York, in the year 1752, and since that time, I have not planted a seed, except what grew on my beds; and by selecting the seed, from the largest stalks, I have improved it greatly.

A complaint is very general, that potatoes of every kind degenerate, at which I am not surprised, when the most proper means to produce that effect is constantly practised: to wit, using or selling the best, and planting the refuse; by which means, almost the whole of those planted are the produce of plants the most degenerated.—This consideration induced me to try an opposite method. Having often observed that some plants or vines produced potatoes larger, better shaped, and in greater abundance than others, without any apparent reason, except the operation of nature, it induced me to save a quantity from such only, for planting the ensuing season, and I was higly gratified in finding their production exceed that of the others, of the same kind, planted at the same time, and with every equal advantage, beyond my expectation, in si ☒, shape, and quan-

tity; by continuing the practice, I am satisfied that I have been fully compensated, for all the additional trouble.

A circumstance happened respecting potatoes, which may be worth relating; a woman whom I met in market, requested me to bring half a bushel of sweet potatoes for seed, the next market day, which I promised to do; but going through the market on that day, previous to her son's coming for the potatoes, I observed the woman selling such as I had brought for her; when the boy came, I asked him the reason they wanted potatoes for seed, while they were selling their own; his answer was, that his father said, if they did not get seed from me, once in three or four years, their potatoes would be good for nothing. Query, if he had used the same means in selecting his potatoes for planting, as I did, whether he would have profited by changing with one who used the other method?

In discoursing with a friend who lived at a great distance from me, on the above subject, he mentioned a fact in favour of changing seed. Some radish seed which he had from me, produced radishes preferable to any thing of the kind ever seen in that neighbourhood, which was near 100 miles distant: but in two or three years the radishes degenerated, so as to be no better than what he had before; I asked his method of saving his seed; he said he had no other radishes in his garden, and when they had pulled what was fit for use, let the others go to seed. I then told him my method, viz.—As soon as the radishes are fit for use, I dig up ten or twelve of those which please me best, as to colour, shape, &c. and plant them at least 100 yards from where any others bloom at the time they do; this, I informed him, was the best method I knew of to improve any kind of vegetables, varying the process agreeably to their nature; I asked him if he thought I should be benefited by exchanging with him? his answer was, he believed I was the best gardener.

In or about the year 1772, a friend sent me a few grains of a small kind of indian corn, the grains of which were not larger than goose shot; he informed me by a note that they were originally from Guinea, and produced from eight to ten ears on a stock. Those grains I planted, and found the production to answer the description, but the ears were small, and few of them ripened before frost. I saved some of the largest and earliest, and planted them between rows of the larger and earlier kinds of corn, which produced a mixture to advantage; then I saved seed from stalks that produced the greatest number of the largest ears, and first ripe, which I planted the ensuing season, and was not a little gratified to find its production preferable, both in quantity and quality, to that of any corn I had ever planted. This kind of corn I have continued to plant ever since, selecting that designed for seed, in the manner I would wish others to try, viz.—When the first ears are ripe enough for seed, gather a sufficient qnantity for early corn, or for replanting, and at the time you wish your corn to ripen generally, gather a sufficient quantity for planting the next year, having particular care to take it from stalks that are large at bottom, of a regular taper, not over tall, the ears set low, and containing the greatest number of good sizeable ears, of the best quality; let it dry speedily, and from

this corn, plant your main crop, and if any hills should miss, replant from that first gathered, which will cause the crop to ripen more regularly than is common: this is a great benefit.

The above method I have practised many years, and am satisfied it has increased the quantity, and improved the quality of my crops, beyond the expectation of any person who had not tried the experiment. The distance of planting corn, and the number of grains in a hill, are matters many differ in: perhaps different soils may require a difference in both these respects; but in every kind of soil I have tried, I find planting the rows six feet asunder each way, as nearly at right angles as may be, and leaving not more than four stalks on a hill, produces the best crop. The common method of saving seed corn, by taking the ears from the crib or heap, is attended with two disadvantages, one is, the taking the largest ears, which have generally grown but one on a stalk. This lessens the production; the other is, taking ears which have ripened at different times, which causes the production to do the same.

A striking instance of plants being naturalized, happened by Colonel Matlack sending some water melon seed from Georgia, which, he informed me by letter, were of superior quality; knowing that seed from vegetables, which had grown in more southern climates, required a longer summer than what grew here. I gave them the most favourable situation, and used glasses to bring them forward, yet very few ripened to perfection; but finding them to be as excellent in quality as described, I saved seed from those first ripe; and by continuing that practice four or five years, they became as early water melons as I ever had.

Many admit the importance of a change of seed, from the fact of foreign flax seed producing the best flax in Ireland; but when it is considered that it is the bark of the stalk only that is used in Ireland, and that this is in the best perfection before the seed ripens, the argument fails when applied to other vegetables.

For many years past, I have renewed the whole seed of my winter grain, from a single plant which I have observed to be more productive, and of better quality than the rest; a practice, which I am satisfied, has been of great use; and I am fully of opinion, that all kinds of garden vegetables may be improved by the foregoing methods, particular care being taken, that different kinds of the same species of vegetables are not in bloom at the same time, near together, as by this bad practice, they mix and degenerate.

I am sensible the foregoing will meet with great opposition and contradiction, but as an experiment is safe and easy, I hope it will induce persons of more leisure, ability, and observation than myself, to make trial, as a mean of improving the agriculture of our county.

Such is the sincere wish of thy friend,

JOSEPH COOPER.

As there have lately been immense losses sustained by the failure of several Banks, not only in this, but in other states, and a vast proportion of the circulating medium in the United States is at this time in Bank Notes, it is a matter of some importance to the community, that it be apprized of their nominal value

and therefore, for the benefit of our readers, we publish the following list corrected from the latest Philadelphia and New York

BANK NOTE EXCHANGE.

	Philad. Per Ct. Dis.	N. York.
U. S. Br. Banks	par	
N. Hamdshire bks.	1½	
Vermont	do.	1 a 3
MASSACHUSETTS.		
Boston Banks	1	½ a ¾
Worcester bank	2	¾
Springfield bank	do	do
Hampshire bank	do	do
Phœnix, of Nant't.	2	1½
Salem banks	2	¾
Other Mass. Notes	do	1½ a 5
RHODE ISLAND.		
Providence banks	2	
Burrillville banks	do	¾
Freemans bank	do	do
Franklin bank	do	do
Wash'n. Westerly	do	do
Other R. I notes	do	do
CONNECTICUT.		
Hartford bank	2	¾
Phœnix at Hart'd.	do	do
Eagle bank, N.H.	no sale	80
New Haven bank	2	par
Middletown bank	do	½
Bridgeport bank	do	par
Derby bank	no sale.	broken
Norwich bank	2	par
New London bank	2	¾
NEW YORK.		
City bks. of N.Y.	par	par
J. Barker's bank	no sale	30
Wash'n & Warren	2	1½
Albany banks	2	½ a ¾
Troy bank	do	do
Mohawk bank	do	do
Lansinburg bank	do	par
Newburg	do	½ a ¾
branch at Ithica	do	
Catskill bank	do	do
Middle dis. bank	do	do
Auburn bank	do	1½
Utica bank	do	1¾
Geneva bank	do	¾
Bk. of Col. at Hud.	do	1 a ½
Orange Co'ty bk.	do	do
Ontario do. at Utic.	do	1½
Plattsburgh do.	no sale	
NEW JERSEY.		
Bk. of N. Brunswick	1	¾
State do. at N. B.	1	par
State do. at Tren'n		no sale
Trenton bank	par	
Jersey City do,		broken
Salem Bk'ing co.	par	¾
Cumberland do.	par	¾

	Philad. Per Ct. Dis	N. York.
Farmers b. M.H.	par	¾
State b. at Camden	p	½
Do Elizabethtown	2	par
Do. Morristown	2	do
Do. Paterson	5	¾
PENNSYLVANIA.		
Philadelphia bks	par	½ a ¾
Harrisburg	par	do
Reading	par	20
Farmers b. Lan'r	par	½ a ¾
Northampton bk.	par	do
Farmers b. B. co.	par	
Easton do,	par	do
Germantown do.	par	do
Montgomery Co.	par	
Ghester co. W.C.	par	do
Delaware co. Ches.	p	do
Lancaster do.	1	
Carlisle do.	½	¾
York do.	½	do
Chambersburg do.	½	¾
Gettsburg do.	½	¾
Pittsburg do.	1	¾
Centre do.	6	20
New Hope	unc	40
Greensburg Bank	4	16
Brownsville	4	6
Silver Lake	no sale	broken
Washington	do	do
Meadville	do	do
Green Castle	do	do
Marietta	do	do
Bedford	do	do
Beaver	no sale	do
Union bank of Pa.	no sale	
Juniatta	do	do
Huntingdon	do	do
DELAWARE.		
Bank of Del.	par.	½
Wilmington & Brandywine	par.	do
Farmers bk & Br.	do	do
Commercial bank	r	
Branch at Milford	½	do
Laurel bank	1	50 a 60
Smyrna bank	½	¾
MARYLAND.		
Baltimore banks	½	¾
Annapolis	½	¾
Havre-de Grace	½	1
Bk of Westminster	1	do
Elkton Bank	½	do
Hagerstown bank	½	do
Fredericktown bk.	½	1 5-8
Branch at Easton	½	
Bank of Caroline	1	
Prince George	1½	

Philad. Per Ct. Dis	N. York.
Port Deposit 15 a 20	1½
Conococheague 2	
Cumberland bank	broken
Alleghany 50	
Snowhill	75
Princess Anne	no sale
VIRGINIA.	
Rich'nd & Branch ½	¾
Bank of the Valley ¾	do
Branch at Romney, ½	do
Do. at Leesburg ¾	do
Do. at Charleston ¾	do
N. W. bank of Va.	
Wheeling 4	5
DIS. of COLOMBIA.	
Bks at Wash'nton ¼	½
Franklin do. at Alex.	
andria no sale.	
Merchants do. do	broken
Bank of Columbia, 25	20 a 25
N. CAROLINA.	
St. bk. at Raleigh	
and bran. par 5	4½ a 5

Philad. Per Ct. Dis.	N. York.
Cape Fear 5	4 a 5
Newbern do	do
S. CAROLINA.	
State Banks 1¼	2 a 2½
GEORGIA.	
State bank 3	3 1-2a4
Augusta B. no sale.	do
KENTUCKY.	
Kentucky & bran-	
ches 60	
TENNESSEE.	
State bank & bran-	
ches 20	½
Bank of Nashville 25	
OHIO.	
Chillicothe 4	
Stubenville 4	
Marietta 5	
NEW ORLEANS.	
City bank notes 5cs	
Doubloons $15 55 60	
Spanish Dols par	
American Gold 3	
Guineas $4 90	
Sovereigns 4 75	
5 Franc Pieces 9 93	

EXPERIMENTS WITH STEEP.

(FROM YOUNG'S ANNALS.)

December 7, 1787.—Sowed fourteen beds with the same wheat seed, as black with the smut as I ever saw any.

	Smutty ears.
No. 1. Sown dry, nothing done to it, had	377
2. Washed well in clean water, had	325
3. do. in lime water, had	43
4. do. in a ley of wood ashes, had	31
5. do. in arsenic & salt mixture, had	28
6. Steeped in lime water four hours, had	12
7. do. in ley four hours, had	3
8. do. in arsenic, four hours, had	1
9. do. in lime water twelve hours, had	6
10. do. in ley 12 hours, had	0
11. do. in arsenic 12 hours, had	4
12. do. in lime water twenty four hours, had	0
13. do. in ley 24 hours, had	0
14. do. in arsenic 24 hours, had	5

TREATMENT OF SEED-WHEAT.

A Wealthy retired Somersetshire farmer asserts, that for thirty three years he treated his seed wheat in the following manner, and always grew good crops, exempt from smut or blight. He collected as many half bushels of sheep's dung as he intended to sow quarters of wheat—as much of the dung placed in a cooler, or other large tub, as the quantity of wheat allotted to it, and sixteen gallons of water and four gallons of some sort of brine, of sufficient strength to swim

an egg, would permit. The brine and water he put together our-
copper or furnace, and made it scalding hot; in which state he p
ed it into the vessel that contained the dung, covering the former sufficiently close with sacks, to prevent as much as possible, the steam from evaporating. When the compound had become sufficiently cool to admit of the operation, he had the sheep's dung rubbed by hand, till it was entirely dissolved; and then whilst the liquid was still lukewarm, he infused the wheat which remained in soak, closely covered, for thirty six hours—at the expiration of which it was taken out of the liquid, placed in strainers, and as soon as it had done dripping, spread on the floor of a barn or granary, after the manner of malt on the floor of a malt house, frequently turning it till nearly dry, well powdering it, whilst a little damp, with finely pulverised lime.

DRAINING.

Prejudices have assailed and will continue to assail, every species of improvement, and theory instead of experience will often sow opinion. It is frequently believed, that draining, clearing, and reducing to cultivation marshes, bogs and swamps, will add to the insalubrity of the air, because vegetables feed upon certain qualities of it, unfit for animal respiration; and thus render it purer for that purpose. But why should we load the atmosphere with poison, because vegetables will absorb a portion of it? Countries kept damp by endless forests, though abounding in the utmost degree with these absorbents of atmospherical maisma, are peculiarly unwholesome: and first settlers unexceptionably become victims to the fact. It proves that the air may be contaminated beyond the purifying power of an entire vegetable wilderness, and that a reliance for its salubrity upon the eaters of poison, would be equivalent to a reliance upon the eaters of carrion for its purification, if shambles were as extensive as bogs. After having made the air as pure as possible by every means in our power, the vegetable chemistry by absorption, is a means provided by Providence, for its last filter; but to infer from this natural operation, that our efforts to render it purer by draining are pernicous, would be an equivalent inference to the idea, that the cultivation of the earth is pernicious because it is capable of spontaneous productions.

Campania and some other flat and marshy districts of Italy, are recorded in history as having been made so healthy and delightful in the flourishing period of the Roman empire by draining, as to be selected by the opulent for country retirement, and splendid palaces. The drains neglected by the barbarous conquerors of Italy, have never been re-established by its modern inhabitants; and the swamps and marshes have restored to these districts an uninhabitable atmosphere, by having their waters, their trees, and their verdure restored to them.

As new countries are cleared and ploughed, they become more healthy. The draining effects of these two operations exceed those of any other, and by drying the earth very extensively, furnish the strongest evidence for ascertaining the effects of draining wetter

lands. If the healthiness of a country is increased by these modes of draining, it will not be diminished by auxiliary modes.

The connection between draining or drying the earth, and human subsistence, furnishes a kind of argument, neither logical nor demonstrative, and yet of conclusive force to my mind. Can it be believed that the author of creation has committed the egregious blunder, of exposing man to the alternative of eating bad food, or of breathing bad air? If not, draining, whether by the sun, the plough or the spade, being indispensible to avoid the first, cannot wreck him on the second evil.

From the great improvement made in the health of the Eastern part of the Union, if we may trust in recent history, by opening the lands to the sun, and with the plough, I long since concluded, that this improvement would be vastly extended by resorting to every other species of draining. And having removed some years past to a farm, reported to be extremely liable to billious fevers, I threw several small streams into deep ditches, dried a wet roading to the house, by open or covered drains, and cleared some acres of spring swamp, closely covered with swamp wood, lying four or five hundred yards south of the house. The multitude of springs in this swamp, made deep, central and double lateral ditches, entering into it every six yards, necessary throughout the ground. The labor was great, but the wet thicket is now a clean dry meadow. Perhaps an attachment to a theory may have caused me to imagine, that the improvement in the healthiness of my family and the draining improvements, have kept pace with each other; but I am under no delusion in asserting, that the healthiness of no part of the world, according to the tables of mortality which I have seen, has equalled it.

A very large proportion of the country on the Eastern waters consists of level land, swamps, bogs and marshes. The first is chiefly cleared and exhausted; the two last are chiefly in a natural state; and all generate poison for want of proper draining by the plough, by ditches, and dams, instead of producing the richest crops of every kind for man and beast, of any other part of the country without infecting the air.

AN EXTRACT.

From the communications to the Philadelphia Agricultural Society, 1825.

A communication from Dr. Mease, on the manufacture of sowing silk in the town (township) of Mansfield, Windham county, Conn. the result of a late visit thereto. This business has long engaged the attention of the farmers of Mansfield.

The making there of 200lbs. sewing silk in the year 1789, is recorded among the articles of intelligence in the Columbian Magazine of Philadelph for January, 1790; and in the late Mr. T. Coxe's interesting and able Digest of the Arts and Manufactures of the United States, from the reports of the Marshals employed in taking the census of the year 1810, the value of the sewing silk and raw silk in Windham county, was estimated at $27,373, that of N. London and Tolland counties was $1128. It would be within bounds

to say, that at present, from the continued and increased attention to this culture, the value of the silk produced is double that of the year 1810. Two kinds of silk worms are bred, one of which (a superior sort) produce two crops annually. The profit of the business, which is chiefly attended to by females, is greater than that of regular agriculture. The excellence of the silk ensures a ready sale of it to the storekeepers, who at a liberal price take it in barter for their goods, and find no difficulty in disposing of it in the city of New York. It is dyed on the spot, of the most beautiful and substantial colors, by a regular artist. From the waste silk, and that from the seed cocoons, neat and substantial clothing and stockings are made.

The Philadelphia National Gazette has the following extract from a paper printed in 1772. "It may be worth the attention of the raisers of silk worms, that there were two instances in Bucks county last year where the worms throve well till after the third moulting, and when they were almost ready to spin, they left off feeding, crawled about, their tails became small and turned yellow, the deadly symptoms amongst us, and they began to die fast; but merely by accident in one instance, and from design in the other, oak leaves were laid in their way, which they devoured greedily, gained health and vigour, and spun as well as any worms could do."

NUTRIMENT OF FOOD.

The parts of food, whence nourishment is derived, consists of glelantine, albamen, and the saccharine matter.

In a course of lectures, delivered by Mr. *Davy*, before the Board of Agriculture, in England, he pointed out, from his own analysis, the quantity of nutritive matter contained in various seeds, roots, and grasses, used as food for man or beast.

From this, it appears that the best wheat contains ninety-five parts in one hundred of nutritive matter; good barley, ninety-two; rye, seventy nine; oats, seventy-four; peas, and beans, fifty-seven; potatoes, twenty five; beets fourteen, carrots, nine; turnips, from four, to six; clover, four; fiorin, six; and other grasses, from two to five.

Wheat weighs sixty pounds to the bushel, and turnips about forty. Thus, it would seem, that as much nourishment is to be derived from one bushel of wheat, as from about twenty-seven of turnips. This, however, is not the case.

What is called the stimulous produced by distention must be taken in the account, in forming a proper estimate of the effects produced, in supporting life, by any kind of food; and it is on this account, that, perhaps, fourteen bushels of turnips, particularly when boiled, would sustain life as long, or fatten as much, as one bushel of wheat. *Farmer's Assistant.*

A CHEAP AND EXCELLENT SUMMER DRINK.

Vinegar and water, sweetened with sugar or molasses, is the best drink that can be contrived in warm weather. It is pleasant and

cooling: it promotes perspiration, and resists putrefaction. Vinegar and water constituted the only drink of the soldiers of the Roman Republic; and it is well known that they marched and fought in a warm climate, and beneath a load of arms weighing 60 pounds. Boaz, a wealthy farmer in Palestine, we read in the Bible, treated his reapers with nothing but bread dipped in vinegar. The custom of swallowing spirits and water is pernicious in every way, while this beverage, on the contrary, is pleasant and healthy, and is not liable to produce what the spirit invariably does, namely, fever and headache. *Oracle of Health.*

DR. ANDERSON'S FAMOUS RECIPE FOR PRESERVING BUTTER

"Best common salt, two parts; saltpetre, one part; sugar, one part—beat them up together, so that they may be completely blended. To every pound or sixteen ounces of butter add one ounce of composition. Mix it well in this manner & it will keep for years and cannot be distinguished from that recently salted. It should however, be remarked, that butter thus cured does not taste well till it has stood a fortnight or three weeks.—Dr. Anderson remarks, that he had found by experience that the above mentioned composition not only preserves the butter more effectually from any taint or rancidity, but makes it also look better, taste sweeter, richer and more marrowy, than if it had been cured with common salt alone.

TO DESTROY THE BORER IN APPLE TREES.

A friend of the Editor, says the New England Farmer, who is a cultivator of Fruit trees, assures us that *now* is the very nick of time for destroying the Apple Tree Borer. The insect is now small, and has begun the work of mischief. His habitation may be discovered by a reddish coloured liquid or gum oozing from the wound he inflicts in the bark of fruit trees, or if he has already penetrated into the wood, the product of his borings, resembling saw dust, will detect his haunts. Our informant says he may, at this season of the year, be extirpated with no other weapon than the point of a pen knife. It is not necessary to expatiate on the advantages, which will result from detaching this minute but formidable enemy to our orchards, in the commencement of his destructive labours. "An ounce of prevention is worth a pound of cure."

VINEYARDS.

The number of Vineyards in York county is twenty seven, of which twelve are of 5 acres extent, or more, and in all there are more than one hundred acres planted. Mr. Thomas Eichelberger, the first *vigneron*, has himself twelve acres. His first planting was four acres, from which in the third year of its growth, he made three barrels of Wine—4th year thirteen barrels—5th year thirty barrels—6th and 7th years, in consequence of frost and drought, the product was reduced to twenty one barrels in each year. It must be remembered too, that in every year about sixty dollars

worth of grapes have been sold. From present appearances, these four acres may at this year's vintage produce sixty barrels of wine.

Cuttings have been sold at thirty dollars per thousand, and planted in squares of four feet.—But experience has shown that this is too close to admit the free access of sun and air; and is, besides, an useless expenditure of cuttings, requiring about twenty seven hundred to the acre, and perhaps not producing more grapes than one fourth the number planted in rows, ten feet apart and the vines six feet asunder in the rows. Another advantage attends the wide planting—the vines may be worked with the plough and cultivator; whereas, at four feet apart each way, they must be worked altogether with the hoe.

The cost of setting out an acre of vines in trenches, and in squares of four feet, independent of cuttings, as has been customary here, is estimated at ten dollars.

A southern exposure, with the rows running in the direction of slope, and, if very steep, crossed occasionally with the furrow to prevent the soil from being washed off, is best, as well on account of protecting the vines from the bleak north west wind, which blows so many months in the year, as also to expose the rows through their whole extent to the sun as early in the morning as possible, so that the moisture may be dried off and mildew prevented. Vineyards, in this country, have not been planted in a great variety of soils. Perhaps all have been planted either in a limestone or a clay state. This last, if sufficiently fertilized, is considered better than limestone land.

Lime has not been used about the vines, but they have been dressed, every third year, with stable manure.

The wine is now selling at one dollar per gallon.

CULTIVAVION OF THE GRAPE.

While millions of money are sent out of the country for the purchase of foreign Wines, it is scarcely known that the article can be, and is, manufactured at home with the greatest ease, and of very superior quality. The experiment has been fully made by Col. Robert Carr, of Philadelphia county, who has a vineyard in full bearing; and it has met with a success which ought to arrest the attention of the agricultural community. We drank a glass of wine from his vineyard a few days ago—It was excellent, though but three years old; and made of the Powell grape, which is a *native* of our own country, grows with great rapidity and luxuriance, and produces more abundantly than any other known. This circumstance is particularly worthy of note. inasmuch as this kind of grape has been thought useless for the purpose of manufacturing—and it has been thought that to succeed with the article, *exotics* would have to be imported from abroad.

We have little doubt that if proper attention should be given to the subject, the cultivation of the grape would become common; the more pernicious liquors would be superceded by the use fo one far

more excellent and wholesome, and a large amount of money now dispatched to other countries would be turned into the coffers of our own agriculturalists. It might be made a very profitable business. We recommend our enterprising farmers to think and enquire further about it; and in process of time we shall say more on the subject. [*Emporium.*

FROM THE VILLAGE REGISTER.

DIRECTIONS FOR MAKING CIDER.

Take care to have every necessary utensil to be made use of in the whole process perfectly clean, and free from every foreign smell. For this purpose, before you begin your work, let your mill, trough and press, be made perfectly clean, by thoroughly washing, and if necessary with scalding water. The casks are another material object, and if musty, or any other bad smell, one head should be taken out, and with shavings, or dry brush, burn the inside; then scrub them clean, and put in the head; scald them well afterwards, and drain them perfectly; when dry, bung them tight, and keep them in a cool shady place, until wanted for use.

The apple should be ripe; and all the unripe and rotten ones, leaves, and every other thing that can tend to give the cider any disagreeable taste, carefully separated from them.

I have found, from careful attention and many experiments, that it is a great advantage to the cider to be separated from the gross parts as soon as possible; for this purpose I tried several methods. That which I found succeeded the best, I shall now relate, as by following it I was able to preserve my cider in a sound state, though made in the early part of the season.

I took a large pipe, of about 150 gallons, had one of the heads taken out, and on the inside of the other laid on edge four strips of boards, two inches wide, and on these strips placed a platform, filled with gimblet holes about three inches apart—On this false bottom I put a piece of hair cloth (old blanket or even swingling tow will do,) so as to prevent any sand from washing into the space between the true and false bottoms. I procured a quantity of course sand which was carefully washed in repeated waters, until it would not discolor the clean water, then dryed the sand, and put it in the cask on the hair cloth, blanket, or tow, about nine inches thick.

Thus having every thing in readiness, I went through the process of making, as quick as possible, by having the apples ground fine early in the morning, putting them in the press as fast as they were ground; and when in sufficient quantities, pressed out the juice, and put it over the sand in the cask, having previously bored a gimblet hole in the side of the cask, between the true and false bottoms, in which I introduced a large goose quil, stopped with another. The pipe was placed so high as to admit a cask under it, to receive the liquor as it ran from the quill, which rightly managed, will be perfectly fine, and being put away in a cool cellar, and stopped close, will keep well, and prove of an excellent quality.

This process is easy, and in every person's power to execute as

the liquor, by being cleared from its gross feculencies will not run into that violent fermentation, so destructive to the fine vinous flavour, which renders good cider so pleasing a drink. B.

Marietta, July 19.

DONEGAL CORN.

We are informed that Colonel F. Boggs, residing about one mile from this borough, has a field of corn, containing ten or twelve acres, superior to any ever raised in this township. A respectable stranger, our informant, from the western part of this state, hearing of this superior crop, felt a curiosity, with several other gentlemen of Maystown, to see it. On measuring several of the stalks, two feet from the ground, they were found to measure seven inches in circumference, and twelve feet three inches high. The stalks vary but little in size throughout the field. The corn was planted on the 12th of May, and measured on the 12th July, making 60 days from the time planted until measured.

RYE (*Secale*)

There is but one kind of rye ; but this may be made either Winter-rye, or Spring-rye, by gradually habituating it to different times of sowing. Take winter-rye, for instance, and sow it later and later, each fall, and it may at length, be sown in the spring ; and then it becomes Spring-rye.

On the contrary, sow Spring-rye very late in the fall, at first, and you may gradually sow it earlier each succeeding year, until it may even be sown in May, and used the first season for pasture, or mowing, and then grown to perfection the second year.

Soils of a sandy or gravelly texture are the most natural for rye. Almost every kind of dry soil is more or less suited to its growth ; it will even grow tolerably well in bog-meadows, when laid sufficiently dry. It will produce considerably on the poorest soils; and prodigious crops of it may be raised on such as are made very rich, as may be seen from a case reported by Mr. *L'Hommedieu.*

A Neighbor of his, manured twenty square rods of ground with four thousand Monhadden fish, and sowed it with rye. In the Spring, it was twice successively eaten off, close to the ground, by Sheep breaking in, after it had acquired a height of nine inches the first time, and six inches the latter. These croppings, however, only served to make it grow thicker and stronger than before; and, when harvested, it produced sixteen bushels, or, at the rate of one hundred and twenty-eight bushels to the acre; giving to the Owner, according to the calculation of Mr. *L'Hommedieu,* at the rate of eighty-five dollars to the acre, of clear profit.

He supposes, however, that the crop would have been entirely lost, had it not been twice eaten off by the Sheep. It is said that prodigious crops of wheat may be raised in the same manner.

Rye is subject to rust, but seldom or never smut ; nor, indeed, to any other disease that we know of, in this country. M. *Du Hamel* makes mention of a disease it is subject to in France, called the *spur,* which causes a dry gangrene in the extreme parts of the bo-

dies of those who eat the grain thus diseased ; so that these parts at length fall off, almost without pain.

'The hotel Dieu at Orleans (says this author) had many of these miserable Objects, who had not any thing more remaining than the bare trunk of the body ; and yet lived, in that condition, many days.'

The grains thus diseased are larger than the rest, mostly crooked, bitter to the taste, rough, deeply furrowed from end to end, and project considerably beyond their husks. It is not every year, however, that the spur produces these effects in that country ; and if the grain be kept some considerable length of time, before it is eaten, it will not prove hurtful.

We notice this disease of rye, in order that, if similar effects should ever be produced from it here, the cause of any such malady, and the means of obviating it, may be more readily understood.

Rye may be raised for many years in succession on the same ground, without materially exhausting the soil, particularly if it be perfectly suitable to the growth of this grain ; and provided, also, that the stubble be turned under immediately after taking off the crop ; But where the ground is suffered to remain unploughed, till the stubble has become divested of all its moisture, and the seeds of the weeds have ripened, the successive crops will gradually lessen in product, and the weeds will increase.

We would, however, by no means recommend such a mode of culture, unless as much as twenty five bushels, or more, of this grain could be yearly had from the acre : as such a yearly product would probably afford a clear profit, to the acre, of half that number of bushels ; and such a profit, in some of the lighter, and in some of the harder kinds of soils, is not to be despised.

As the soil most suitable for rye is usually that which is most benefitted by the use of gypsum, it would be much the better plan, instead of successive crops of Winter rye, to sow this grain, and Spring rye, alternately, in order that the ground might, every other year, be enriched by the application of this manure.

The growing crop of rye receives no benefit from the application of this manure ; but it quickly covers the ground with a fine sward of white clover ; and, as soon as ground is thus swarded, it is in good condition for bearing any crop. Let the gypsum, therefore, be sown in the Spring, on the growing crop of Winter-rye; and, by the middle of October following, the ground will be covered with white clover; turn this sward over in the later end of the Fall; and in the Spring sow a crop of Spring-rye; and, as soon as this is taken off, turn the ground over again for a crop of Winter rye; and in the Spring repeat the process of manuring with gypsum, as before, for a crop of Spring-rye, thus proceed with these crops alternately.

In this way, we will venture to say, that nearly double the amount of grain might be obtained, in each crop; particularly in the northerly part of our Country, where Spring-rye is nearly as productive as that of Winter.

In such a mode of culture, however, particular attention should be paid to turning under the stubble of the crop of Spring-rye as

quick as possible, in order that the seeds of the growing weeds be prevented from ripening, as well as for enabling other seeds, which may lie buried in the soil, to vegetate, and thus be destroyed by the after ploughing and harrowing for puting in the next crop.

Many Farmers may have pieces of hard gravelly, or very light sandy soil; for which such a mode of culture might probably be found as profitable as any to which the land could be applied: But of this, the judicious Farmer will be best enabled to judge, after obtaining a full knowledge of what mode of culture is most profitable for his more sterile grounds; and, in order to this, he must estimate the expenses of puting in his crops; the clear profits, after paying these expenses, and the rent of the land; and, whether his lands are likely to become, eventually, more exhausted by such mode of culture, than by a change of crops, where grasses, suitable to the soil, should be cultivated, during some seasons.

Where Winter rye is early sown, a bushel to the acre is probably sufficient; but, of Spring-rye, a bushel and a half, to the acre, or perhaps more, should be sown.

Rye, intended for family-use, should be harvested as early as the grain can be prevented from shrinking, and let lie on the ground a day or two, to harden. In this way, the grain will make much whiter flour; though, perhaps the product will not be quite so heavy and bulky, as when left till fully ripened. Probably all that is gained by letting the grain fully ripen, before harvesting, is an additional thickness of the skin; thereby increasing the quantity of bran, but not of flour.

Bread made entirely of rye is laxative, and good to prevent costiveness. Wheat, especially where the flour is very fine, has an opposite tendency. For most constitutions, therefore, bread made of equal parts of these grains is considered the most conducive to health. Mixing some flour of Indian corn, with that of rye, will serve to prevent its clamminess.

From the Memoirs of the Board of Agriculture of the State of New York.

ON LIMING SEED WHEAT.

By James M'Call, of Alleghany. Feb. 26, 1825.

Sir,—In answer to your inquiry on the subject of smut in wheat, I will state to you what has fallen under my observation.

When I resided in Seneca county, several years ago, my attention was particularly drawn to this subject, by observing, that while myself and neighbours were much injured by smut in our wheat, the crops of Mr. C. uniformly escaped. I inquired into the cause of this singular exemption, and learnt that it was owing to the seed having been limed.

In 1816, therefore, I washed my seed, put about three pints of lime to each bushel, mixed it well, and let it lie in a heap twelve hours before sowing. My crop was perfectly clean, while I can say all my neighbours had more or less smut.

In 1817, part of my seed was washed and limed, as in the prece-

ding year; another part was washed and limed, and a pint of salt to each bushel, mixed with the lime; a third part was washed in strong pickle and limed; and a fourth sown without any preparation. The result was as follows: The first had a little smut; the second none; the third none; and the fourth was a quarter smut—all on the same kind of land, and all sown in good weather, between the 5th and 15th of September.

In 1819, Mr. L. bought his seed of my neighbors, Mr. B. and Mr. G. and of myself and sowed without preparation. Mr. G's crop was from seed had of me the year before, and sowed without liming. B. had never prepared his seed from any process. It was found, on harvesting the crop, that the part sown with my seed was free from smut—that sown with G's seed had a little—and that sown with B's seed was one fourth smut. This statement I had from Mr. L. I mention this circumstance to show, that seed wheat well cleaned as mentioned, will have an effect for two or three crops; but I would never recommend to sow wheat without salt or lime.

As the Hessian Fly has never yet troubled us in Alleghany, I am unable to speak of the efficacy of preventing the ravages of that insect.

I beg leave to suggest to farmers the propriety *of spreading their straw upon their pasture grounds*, either in spring or fall. It will shield the ground from the extreme cold which often breaks the fibrous roots of the grasses. In summer, it shields the ground from the schorching rays of the sun, prevents the evaporation of moisture, fertilizes the soil, and causes a strong rich sward, and when ploughed, will be equal to a good coat of manure.

JAMES M'CALL.

J. BUEL, Sec'ry. &c.

FROM THE AMERICAN FARMER.

WHEAT.

Talbot County, July 17th, 1826.

Mr. Skinner—Most of the different kinds of Wheat, such as the Lawler, the keggy, and the New York white flint, have been supposed and reported to resist the ravages of the Hessian fly, by some peculiar inherent quality.—This notion is I believe, now satisfactorily exploded, as experience has taught us that there is no wheat that resists the Hessian Fly. Under circumstances favorable to the fly, it will destroy every branch of wheat which is deposited. Some kinds of wheat have greater recuperative powers than others; and of these the Lawler is most remarkable. After the fly has appeared to have destroyed every shoot above ground, if the season will aid it at all, it will put forth fresh shoots which will bear grain; but the Lawler is the latest of all wheat, and takes the longer to mature. Of course, as we have all found, it is the most subject to rust and disaster. Lawler wheat should never be fed down. The same remarks apply to the keggy wheat, and in a great degree to the New York white flint, except that this last does not possess the

recuperative power of the Lawler, and is not quite so late as a wheat. It branches at first as finely as any wheat. The opinion that any wheat has the faculty to *resist* the fly either by the solidity of its stalk, the roughness of its blade, or the incompressibility of the stalk, or any other quality peculiar to itself, is a fallacy dangerous to be entertained, because not founded in fact. There is a difference in the stalk of different kinds of wheat, but it is unimportant as to the fly.

The early or "rare ripe wheat," is not *supposed* to have any quality of this kind. It has a soft straw, delicate for food, shorter than other straw, and is as easily destroyed by the fly in autumn, if seeded early, as any wheat that is known. Neither has it any of the recuperative powers of the Lawler, nor does it branch equal to the New York white flint. Its power to *elude* the fly consists in its early maturity alone, causes it to do well after late seeding, so as to be certainly exempt from autumn fly, and to be so forward in spring as to be jointed before the fly ordinarily commences its injurious attacks, and therefore it is out of danger. It owes the greater security against fly and disaster, altogether to its early maturity. The early wheat has a plump and white grain, and is uniformly the heaviest wheat that we have grown. It scarcely ever averages less than sixty pounds to the bushel, and has frequently been known to go to sixty four and five; sixty one and two pounds per bushel is its usual weight.

I do not remember what estimate the millers set on this wheat in comparison with other kinds; but this we all know, that millers are a little acute as well as capricious. It is an absurdity for farmers to be guided by millers as to the particular kind of wheat they grow. Millers will always crack up that sort of wheat on which they think they can make the greatest gain, either by the fact of the smaller offal, or the fiction which they may have it in their power to create in relation to any thing else. But the farmer should understand his soil, his climate, the ordinary accidents to which different wheat is liable, and the character of the different kinds of wheat; then he will be enabled to form some judgment as to the wheat that will produce in his own lands the greatest number of pounds weight to the acre; and that is the mode to draw the greatest number of dollars to his pocket—which is after all, the "*valde optatum.*"

Nothing can be more ridiculous than to see farmers every where buying up nice white wheat for seed, without ascertaining whether their land will grow it or not; supposing, I presume, that the produce must of course be as white as the seed. They spend their money in buying this seed at extravagant prices, and are mortified to find that the product is greatly inferior; in which case they sometimes accuse the seller of the seed wheat of not doing them justice, and desperately try somewhere else another expensive purchase, until they pay very dear for the knowledge, that their lands will not produce the fine white wheat, and that there are other kinds of wheat much better adapted to them, that they will produce more certainly and more abundantly.

There is another consideration too, sir, that may not be without its

influence. We never see hung up in that excellent and highly useful gallery of agricultural portraits, the "American Farmer," the name of a farmer for his growing many pounds of wheat to the acre, until he gets up to some thirty or forty bushels; whilst those farmers who own the white wheat lands,

O fortunatos nimium! soliginis arva
colintes———————

if they only grow from ten to fifteen bushels to the acre, are annually celebrated as the very nobility of agriculturalists, (I use the term in no unkind sense,) and are mentioned by name as getting eight or ten cents a bushel more than the growers of red or brown wheat for theirs. This is a stimulating excitement—and it ought to excite, not to error, but to exertion. A vast proportion of land that will not grow the white wheat; will grow the heaviest crop of other wheat; and their proprietors ought to yield up the hope of the white coloured grain, (pardon the inaccuracy of the phrase:) for the more solid advantage of weight and quantity. Let these farmers be content to seek what is attainable; to improve their lands so as to produce such an average per acre as will entitle them to a place in the gallery of Agricultural worthies. They cannot hope for fame in violation of the laws of nature. If lands are not natively of the peculiar texture of soil to grow the white wheat, no human art can supply the deficiency.

If it should be asked, if it is not equally strange that men on stiff soils and flat lands, should be enquiring for the seed of the bright tobacco to plant in those soils which every body knows will not produce the same sort?—I reply, I think not; and for this reason, founded upon this fact, that tobacco will retain more of its quality *for one year* than any other plant in an uncongenial soil: but, after the first year, it will deteriorate so as to be totally unlike the plant from which it sprung. But what a great difference there is between the trouble and expense of procuring seed wheat, and tobacco seed every year. A half pint of tobacco seed is more than enough for any man's use, except for those most extensively engaged in planting. This half pint can be procured, I suppose, for a dollar, if there were not a thousand planters who would take pleasure in presenting a friend with that quantity out of their own stock; but the frequent purchases of seed wheat are very troublesome and very onerous. We must submit to see those two orders of agricultural knighthoods the one decked with the plant of the golden leaf tobacco, the other with the full eared sheaf of white wheat, without repining at their good fortune; and if their fame kindles the fire of ambition in our hearts, let us endeavour to rival them in taste, in judgment, in industry, and in exertion. AGRICULTOR.

INDIAN CORN AND FLAX.

Mr. Hadner of Saxony, attributes the exhaustion of the soil by Indian corn to the roots after the crop is gathered. He therefore plucks up the roots with the plant, and remarks that his corn field is favourably distinguished from those which surround it. The same

gentleman once sowed some flax-seed that was twelve years old, and to his astonishment, it produced the best flax he ever saw.

FROM THE NEW ENGLAND FARMER.

CHEESE.

When cheeses are made from unskimmed milk they are called milk cheeses, altho a part of the milk has been kept over night or longer.—These are the richest and most valuable. Two meal cheeses are made of the evening's milk skimmed, mixed with the mornings milk unskimmed. Two meal cheeses, when well made, without any mixture of sour milk are almost as valuable as new milk. A third sort is made of milk, the whole of which has been skimmed. These are of course of the least value. If your milk be not just come from the cows, make it blood warm, and put in your rennet ; but no more than will just make the curd come. Add an ounce of fine salt to as much curd as will make a cheese of fifteen pounds, and in proportion for a greater or less. Stir the curd till it has gathered ; put in a strainer, and with your hands work out all the whey ; then lay it in a clean cloth, and put it in the press and let it stand there two hours ; then take it out, rub it over with fine salt, put in another dry cloth, and put it in the press again, where it is to remain till the next cheese is ready. When taken out of the press, put it in a brine twenty four hours, and add to the brine about a tea-spoonful of saltpetre. Some little additions of salt and saltpetre, must be occasionally made to the brine ; and let it be cleansed as soon as necessary, by heating it and taking off the scum. When you take the cheese out, dry it with a cloth ; bind it round with a long string, to make it keep its shape, which must be kept round it for some days, and let it be daily turned on the shelf, for two months.

Various receipts for making rennet have been given by different writers. The following is simple, and perhaps as good as any. Empty the maw of its curd, wash it slightly, soak it with strong brine, till it is well salted, and dry it on bows made for the purpose; then take two quarts of strong brine that will bear an egg, blood warm, then let the maw steep in this twenty four hours, when the liquor will be fit for use ; bottle it up and cork it tight, and it will keep for a twelve month. About a teacup full will be sufficient for the milk of ten cows.—Some direct spices and a lemon sliced to be put into this liquor. The rennet bag may also be salted and dried, as before directed, and pieces of it occasionally used, by being previously soaked in warm water, and a quantity of this water used, in proportion to the quantity of milk to be turned.

The acid contained in the maw is very apt to become rancid, and to putrefy, if a sufficiency of salt be not applied ; care therefore must be taken to prevent this, by as much salt of the strongest kind as the rennet may receive.

REMEDY FOR CHOKED CATTLE.

A correspondent in the New England Farmer gives the follow-

ing as an effectual remedy, in most cases, for choaked cattle.

Take about a thimble full or more of gun powder, put it in paper with three sides closed, and cover the other end with the fore finger; then insert your arm into the throat of the creature below the gullet, let the powder be discharged from the paper; and as soon as the powder dissolves, the animal throws the substance from his throat. There have been instances where large substances were detained in the throat, that required two portions before relief was given; but farmers may rely upon this recipe as in most cases, an effectual one. It was bought of a German in Pennsylvania, and remained a secret with the purchaser for some years; but humanity prevailed, and the intelligence is for the public.

WOOL.

Extract of a letter from Col. James Sheppard, of Northampton, to the Editor of the 'American Farmer.'

"All sheep give coarser fleeces in proportion to their condition; and I estimate the fleece of a ewe in good order, weighing three pounds, of as much value as that of one in high order, weighing four pounds. All sheep require to be kept in good order, and a flock of ewes from three years and upwards will then yield, upon an average, three pounds each of clean washed wool; and wethers of the same age and condition will shear four pounds each; and any advance in weight beyond that, in my opinion, tends to diminish the value of the wool in about the same proportion as the weight is increased. Hence it is, that I value the fleeces of three pounds, as much as one from a fat ewe weighing four pounds, and even more; and from the above remarks I wish to be understood, that any attempts to increase the value of the shearing of a flock by over feeding, must fail in the estimation of all manufacturers that understand their business. The keeping of sheep fat not only increases the size and length of the staple of wool, but it increases the oil and yolk of this animal, which greatly increases the weight of the wool, oil &c. without adding to its value.".

DISEASE PRODUCED BY DRINKING COLD WATER IN HOT WEATHER.

At this season of the year there is no subject on which a few words may be said with greater promise of advantage, than the means of relieving the disorder usually produced by drinking cold water in hot weather. No summer passes without many lives being lost by this cause; and none should be allowed to arrive without something to remind the profession in what way the evil may be best averted.

In Rush's Medical Inquiries there are some very pertinent and useful remarks on this subject. He lays it down as a settled point, that,

"Three circumstances generally concur to produce disease or death from drinking cold water. 1. The patient is extremely warm. 2. The water is extremely cold. And, 3, a large quantity of it is

suddenly taken into the body. The danger from drinking the cold water is always in proportion to the degrees of combination which occur in the three circumstances that have been mentioned.

In a few minutes after the patient has swallowed the water, he is affected with dimness of sight, he staggers in attempting to walk, and unless supported, falls on the ground, he breathes with difficulty; a rattling is heard in his throat; his nostrils and cheeks expand and contract in every act of respiration; his face appears suffused with blood, and of a livid colour; his extremities become cold, and his pulse imperceptible; and unless relief is speedily obtained, the disorder terminates in death in four or five minutes.

More frequently, patients are seized with acute spasms in the breast and stomach. These spasms are so painful as to produce syncope, and even asphyxia. They are sometimes of the tonic, but more frequently of the clonic kind. In the intervals of the spasms the patient appears to be perfectly well. The intervals between each spasm become longer or shorter, according as the disease tends to life or death.

It may not be improper to take notice, that punch, beer, and even toddy, when drank under the same circumstances as cold water, have all been known to produce the same morbid and fatal effects.

Thus far the account corresponds with the cases which have fallen to our observation.

As it regards the method of removing these unpleasant symptoms and preventing their fatal result, Dr. Rush says he knows but one remedy, and that is LIQUID LAUDNUM. True, it is an important and indispensible remedy, and we have frequently been told by patients after their recovery that they felt they must have died had they not taken the Laudanum. It seems as they say, to go to the right place at once, and effect just the purpose most desired. External auxiliary means are also necessary to expedite the removal of the disease. The body, and more particularly the extremities should be wrapt in hot blankets, and warmth and friction unceasingly applied to the hands and feet. As soon as practicable, the ladanum combined with æther should be administered in a large dose. As much should be given at a dose as can be taken with safety, and the same repeated every half hour till its effects become obvious. A little spirit of peppermint may be given occasionally, or Aqua Ammonia as the judgment of the practitioner may direct.

In addition to these means we would recommend that the water be abstracted from the stomach as soon as possible, by the stomach syringe.

To prevent the evil we have spoken of, we beg leave to refer the reader to the following remarks of Dr. Rush.

"If neither the voice of reason, nor the fatal examples of those who have perished from this cause, are sufficient to produce restraint in drinking *a large* quantity of *cold* liquors, when the body is *preternaturally* heated, then let me advise to,

1, Grasp the vessel out of which you are about to drink, for a minute or longer with both your hands. This will abstract a portion of the heat from the body, and impart it at the same time to the cold

liquor, provided the vessel is made of metal, or glass or earth ; for heat follows the same laws, in many instances, in passing through bodies, with regard to its relative velocity.

2, If you are not furnished with a cup, and are obliged to drink by bringing your mouth in contact with the stream which issues from a pump or spring, always wash your hands and face previously to your drinking, with a little of the cold water. By receiving the shock of the water first upon those parts of the body, a portion of its heat is conveyed away, and the vital parts are thereby defended from the action of the cold. [*Boston Medical Intelligencer.*

ON THE HESSIAN FLY (*cecidomyir destructor*) AND PROPER COURSE OF CROPS

Read before the Agricultural Society of Bucks County.

Sharon, 1st June, 1821.

Sir—In tracing the history of the Hessian Fly (Cecidomyir destructor,) for the past year, 1820, as laid down in my communication of the first of February last, I omitted that part which relates to its evolution from the straw about the barn, and therefore the present is principally intended to supply that defect, and to offer some observations growing out of it. The insect first appeared in the winged state in the house on the twentieth day of February (the weather being then moderately warm,) and continued to be seen occasionally, or whenever the weather was in a suiteble state, until the opening of spring ; indeed in a room where fire was kept, I saw it on some quite cold days; but the number was so inconsiderable, that no injury need be apprehended. I must then call the attention of the society to the stubble fields as heretofore recommended ; for I am now satisfied, that the insect can be so crippled, as to be rendered harmless to our crops ; but to insure success, all must adopt the same plan : this indeed is a great difficulty, because the case has been given up as irremediable. It should not, however discourage us, as difficulties ought always to stimulate to greater action, and the importance of the subject before us, demands our every exertion ; besides, I am persuaded that our purpose can be easily accomplished. If such a rotation of crops can be devised, as will admit the ploughing in the stubble at the proper season, and which will yield as great profits as our present course, independent of the destruction of the fly, surely every one will be willing to try the experiment ; inasmuch as it will he risking nothing for a prospect of great gain. My plan is already submitted generally, but it may be well to state it more particularly, and confine it to that part, in which alone my confidence is now placed; that is, plough in the stubble immediately, or soon after harvest ; then harrow the ground in the same direction that it was ploughed ; which will destroy a large proportion, (in the pupa state,) and will cause plants to spring up, sufficient to receive the deposit of any flies that may escape the ploughing, or evolved from the straw that was stacked or housed ; suffer those plants to grow till near the time of putting in the wheat crop; then plough again, and the work of destruction will be finish-

ed ; or if the ground is not intended for grass or winter grain, the last ploughing may be done at any time during the fall: for although some of the pupa might change to the fly state, yet, it being the habit of the insect to deposit its progeny on the nearest plants that are suitable, and as there would be ample provision at hand, there would be no necessity for it to remove from the stubble fields. Rye and barely stubbles must also be attended to, and plants growing about stackyards and barracks should not be neglected. The course of crops that I would propose is, first, wheat ; second corn ; third, oats and clover. The sod to be broken up for wheat, the first ploughing being shallow and done in hot weather, a decomposition of the vegetable matter in the soil will immediately commence ; and when sufficiently advanced, give a second and deep ploughing, and harrow as occasion may require ; just before putting in the crop, give a third and very shallow ploughing , begin sowing the last week in September, so as to finish the first in October, or if it were possible, I would sow the whole on the first day of October ; because prior to that period, the insect appears in such quantities, as to do considerable injury during the fall, and is stationed for a second attack in the spring ; whereas, afterwards the number is not sufficient to make any serious impressions ; but it is not safe to postpone the sowing much beyond that time, as the young plants would be more likely to perish by the winter, than the fly ; and the wheat that is in a backward state in the spring, is more subject to attack and less able to resist it. The farmers in this neighbourhood generally agree, that the time here mentioned is the proper time of sowing, and the growing crop fully evinces its truth. The lot I had sowed on the thirtieth of August, is entirely cut off; and some sown by my neighbours about the 20th of September, will scarcely yield a crop worth cutting : such as was sown the last of September and first of October, promises well, and that sown later is much injured, except where it was highly manured. The time of sowing in other places, should be regulated by climate or actual observation. Thus managed, I believe a good crop may be calculated on, even without manure ; but it is said by some to favor the increase of garlic ; it might be so in the first instance ; but taking the whole course into view, I do not think it would have the tendency, and in order to remove the objection entirely, it would be necessary to commence the system, by breaking up the ground at a time when the garlic was in a growing state, or by pasturing the garlic in the early part of the season with sheep. I would apply the manure to the corn crop, either by spreading it upon the wheat stubble, and immediately ploughing it under, or putting it on in the spring. The oat crop should be put in as early in the season as practicable, and directly after harrowing sow closer : it has been found when sown early, to take quite as well as with wheat ; let the clover remain one year, then turn it in for a wheat crop, and continue this course on the same ground, until it shall be completely cleaned of all trash ; then sow some more permanent kind of grass, and suffer it to rest, in order to plough up that part of the farm which had been under grass. Thus dividing the farm between grass and tillage land, and changing as

liquor, provided the vessel is made of metal, or glass or earth ; for heat follows the same laws, in many instances, in passing through bodies, with regard to its relative velocity.

2, If you are not furnished with a cup, and are obliged to drink by bringing your mouth in contact with the stream which issues from a pump or spring, always wash your hands and face previously to your drinking, with a little of the cold water. By receiving the shock of the water first upon those parts of the body, a portion of its heat is conveyed away, and the vital parts are thereby defended from the action of the cold. [*Boston Medical Intelligencer.*

ON THE HESSIAN FLY (*cecidomyir destructor*) AND PROPER COURSE OF CROPS

Read before the Agricultural Society of Bucks County.

Sharon, 1st June, 1821.

Sir—In tracing the history of the Hessian Fly (Cecidomyir destructor,) for the past year, 1820, as laid down in my communication of the first of February last, I omitted that part which relates to its evolution from the straw about the barn, and therefore the present is principally intended to supply that defect, and to offer some observations growing out of it. The insect first appeared in the winged state in the house on the twentieth day of February (the weather being then moderately warm,) and continued to be seen occasionally, or whenever the weather was in a suiteble state, until the opening of spring ; indeed in a room where fire was kept, I saw it on some quite cold days; but the number was so inconsiderable, that no injury need be apprehended. I must then call the attention of the society to the stubble fields as heretofore recommended ; for I am now satisfied, that the insect can be so crippled, as to be rendered harmless to our crops ; but to insure success, all must adopt the same plan : this indeed is a great difficulty, because the case has been given up as irremediable. It should not, however discourage us, as difficulties ought always to stimulate to greater action, and the importance of the subject before us, demands our every exertion ; besides, I am persuaded that our purpose can be easily accomplished. If such a rotation of crops can be devised, as will admit the ploughing in the stubble at the proper season, and which will yield as great profits as our present course, independent of the destruction of the fly, surely every one will be willing to try the experiment ; inasmuch as it will he risking nothing for a prospect of great gain. My plan is already submitted generally, but it may be well to state it more particularly, and confine it to that part, in which alone my confidence is now placed; that is, plough in the stubble immediately, or soon after harvest ; then harrow the ground in the same direction that it was ploughed ; which will destroy a large proportion, (in the pupa state,) and will cause plants to spring up, sufficient to receive the deposit of any flies that may escape the ploughing, or evolved from the straw that was stacked or housed ; suffer those plants to grow till near the time of putting in the wheat crop ; then plough again, and the work of destruction will be finish-

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occasion may require ; but when the farm becomes cleared of all noxious weeds and other pests (and perhaps it is the best way to clear it,) that part appropriated to grass ought not to be broken up oftner than may be found necessary ; as it will take several years to get well set with natural grass ; which is much to be preferred to the artificial grasses, especially for pasturage ; indeed with top dressing occasionally, and sometimes scarifying, the ground need scarcely ever be ploughed. That part allotted to grains and clover, might be worked in the manner above mentioned, any length of time, with improvement to the soil; and under that management, not only the ravages of the Hessian Fly will be prevented, but the worm that takes its lodgment in the cavity of the stalk (as stated in my address to the society) will share the same fate ; for the great egg that produces it, is deposited about the same time as that of the fly ; and further, our grain crops would probably be exempt from the attacks of most other insects ; at any rate I am persuaded, that our corn would not be injured by the cut worm, as its parent deposits its progeny among grass ; and the natural green or spear grass, which I propose to be chiefly attended to, would not be much injured ; besides, the spider which I presume is the cause of the salivary disease of animals would be likely to lodge in that species of grass, or rather it would prefer the clover; and by ploughing that crop in, we should destroy it : or if, as some imagine, that the disease is caused by the animal's feeding on a plant called *enphorbia maculata*, which is said to be common on pasture grounds, that plant will soon be rooted out by the natural grass ; and in either case we should get rid of the evil.

If then the system which I here propose, shall effect any one of the contemplated objects, the gain to the community would be truly great ; and incalculably so, if it should result in the complete realization of the whole. I am not however, tenacious of my plan or course of cropping ; I only offer it for consideration : let others pursue their views, and by giving the result of their experience, we may adopt that which is best. My great or leading object is, to destroy or cripple the fly while in the stubble fields, where it is completely exposed and in our power, and in my opinion the only point that can be attacked with success ; and therefore I call upon every friend of Agriculture, who is engaged in the culture of wheat, rye or barley, to unite in it. Yours, very respectfully,

JAMES WORTH.

JOHN LINTON, Esq.

Chairman of the Committee on Etomology.

FISH FOR MANURE.

"At Riverhead, lately, the seine under the command of Captain Noah Youngs, drew to the shore 1,500,000 of a species of fish called Moss Bunkers." The same paper says, "There have been taken at the place, within three weeks, about 9,000,000 of the above kind of fish, which at one dollar per 1000 will amount to $9000." These fish are used for manure, and 10,000 are calculated to make

the poorest land produce twenty bushels per acre. The Long Island Farmer published at Jamaica, asks: "Might not this be made a profitable business for our bay." Certainly, if that kind of fish is sufficiently abundant in that bay. Along the sea coast of Connecticut, the business of taking these fishes for manure, has been pursued for twenty years past. They are called "white fish," and such has been their utility, that the poorest lands have become by far the richest and most productive in the state. The mode of taking them is this; The fishermen watch upon the beach until they see the approach of a school, which is indicated by a change upon the surface of the water like the shadow of a dark cloud. They then row rapidly around the school, dropping the net so as to encircle them, when the net is drawn in to land, and the fishes taken out. We have often witnessed the operation, and do not think the numbers set down to a draught incredible.

Since writing the above, we have conversed with a gentleman who saw 300,000 herrings taken at a single draught, in a net at Alexandria; (D. C) during the present season. The gentleman who mentioned the fact to us, says, that he was afraid to tell us so tough a story, until he caught a glance at the proof of the foregoing, and found that our credulity was not staggered at one three times as large!—*Com. Adv.*

The disease which has, of late years, been so fatal to the Morello Cherry Tree, has generally been attributed to the effect of an insect piercing the excremeties of the smaller branches and depositing in them an egg which produces a species of worm, and causes excressences to grow on the ends of the branches, materially effecting the health of the tree, and finally prodncing decay. The opinion however, of Mr. Worth in the following article, and which appears to be supported by actual experiment, ascribes the decay of the Morello Cherry Tree to another cause, and prescribes a very simple remedy for the disease, which, we think worth a trial.

SOME OBSERVATIONS ON THE DISEASE OF THE MORELLO CHERRY, AND MANAGEMENT OF TREES.

Read before the Agricultural Society of Bucks County, 30th July, and before the Philadelphia Society for promoting Agriculture, Oct. 22, 1821.

Sharan, Bucks County, Pennsylvania, 5th July, 1821.

Sir—The premature decay of our trees, particularly those of the fruit bearing kinds, is indeed a matter of serious regret, and demands our pointed attention. I hope that the important committee over which you preside, will, in their researches, make some discoveries that may prove of peculiar benefit to society. I consider it a privilege to belong to such a committee, and will most cheerfully throw in my little store of knowledge.

In most cases of decay that have come under my notice, I have found a collection of some kind of vermin, which I supposed to be the cause of disease; but on a more close examination I am of opinion, that in some instances it is only the consequence, especially

as relates to the morello cherry. The disease which has proved so fatal to that tree, is first observed by the formation of excressences in the outer branches, and even in the stems of very young trees. In these excressences are lodged a number of small whitish worms, which I took to be, and I believe many others think is, the cause of decay; but being informed that scoring the bark was useful, and the informer being unable to give any reason why it was so, I was induced to look further into the case, whereupon I dicovered, that the lumps or excressences were formed about a month before the worms commenced their operations, and then they appeared to enter from the outside. Last year I selected for experiment two trees that stood near to each other: early in March I scored one of them, by making three incisions along the trunk, extending from the branches to near the root; the other I left undone. In the spring of the current year that which was scored was free of disease; whilst that not scored was so effected that I thought it necessary to take the whole head off. Joshua Tyson, Esq. of Montgomery county, has a tree of the large brown species, the trunk of which is about thirteen inches in diameter; it became much diseased in the year 1819; in the course of that year the bark opened along the trunk in a perpendicular direction, about six feet in length, as if it had been scored; in 1820. the tree threw out new shoots from below the diseased parts, and assumed a healthy appearance, and during that year a ridge formed where the bark had been opened, jutting out an inch beyond the general round of the body; and in consequence of the tender state of the bark in that, the ridge has this year increased, and it does appear that it will continue to do so, until relieved in other places by incisions. On another examination of the excressences this season, I found the eggs of the insect laid on the outside, and that the worm does actually make its way inwards. From these observations, I conclude that the decay of this valuable fruit tree is occasioned by a diseased state of the bark (being which is commonly termed bark-bound, obstructing the circulation of the sap,) and that scoring at the proper season is an effectual remedy; at least it is harmless and easy. Whether I have chosen the best time for the operation remains to be proven; and if I am in the main right in my conclusion, it is a strong instance of the necessity of searching into causes, instead of being misled by mere effects.

It appears to me that the practice of trimming trees, so as to form the head several feet above the ground, is unnatural, although it is certainly attended with many conveniences, and on some occasions cannot be dispensed with, particularly where the ground is tilled; but such exposure of the stem is perhaps frequently the source of disease, especially in some of the delicate kinds of fruits, such as cherry, plumb, peach, &c. I have now some peach trees growing on the north side of a board fence, which really look more flourishing than some others that are not so protected, and from this hint I would suggest the propriety of suffering the head to form so near the ground as to shade the whole stem; or if trimmed up, to place a board, or tie straw or some other covering on the south side of each tree. The application of soft soap, well scrubbed with a hard brush

has lately been highly spoken of; and the washing with lime or composition has long been practised; and also scraping and currying the bark; all of which I believe to be useful, but each in rotation, or some change is probably best. A respected member of our society has rocommended the ringing or girdly of fruit trees, to force them into bearing. I have tried the experiment, and am satisfied that fruit was thereby produced. At the same time I am convinced that the trees are injured, and must therefore disapprove of the operation, and in lieu thereof I would decidedly prefer scoring, that is by making incisions into the bark lengthwise up the trunk, continuing if necessary along the principal branches.

In planting trees I would recommend the digging the holes of a size more than sufficient to receive the roots (the larger the better) but not too deep, especially if the soil is shallow and the subsoil clay, the earth thrown in should be completely pulverized and enriched, and if in the spring season, about half a bucket of water to each tree is very beneficial. After planting the more valuable or delicate kinds, I have thrown straw, leaves, or other litter around with great success; the litter keeps a continual moisture, prevents the growth of other plants, and acts as a manure; but it should not be continued longer than autumn, as there would be danger of mice harbouring in it and barking the trees. Some persons stake their trees at the time of planting, and I think well of the practice for the first season; but the stakes should be removed by winter, otherwise the stem, either depending upon the support afforded by the stake, or for want of proper exercise, will not grow in proportion to the other parts, and will become too weak to sustain the head; for trees have an apparent consciousness, and will conform to the situation in which they are placed.

Yours, very respectfully,
JAMES WORTH.

Mr. JAMES P. MORRIS, Chairman of the Committee on Fruit and Forest Trees.

ON THE MANAGEMENT OF BEES.

BY DR. JAMES HOWISON, OF HILLEND.

[*From the Memoirs of the Caledonian Horticultural Society*]

Concluded from Page 312.

Of swarming.—For several years past, my hives have uniformly sent forth their first swarms during the second week in July, from which it appears that early or late swarming *in the same situations* is not so much regulated by good or bad seasons, as might have been expected.—Near the sea, this will, of course, take place some weeks earlier.

The first swarming is so long preceded by the appearance of drones, and hanging out of working bees, that if the time of their leaving the hive is not observed, it must be owing to want of care. The signs of the second are, however, more equivocal, the most certain being, that of the queen, a day or two before swarming, at intervals of a few minutes, giving out a sound a good deal resembling that of a cricket. It frequently happens, that the swarm will leave

the old hive and return again several times, which is always owing to the queen not having accompanied them, or from having dropt on the ground, being too young to fly to a distance.—In such cases I have seen her found near to the old hive; and on being taken up and placed in the new one, the swarm instantly settled.

Gooseberry or current bushes should be planted at a short distance from the hives for the bees to swarm upon, as, by attending to this, I have not lost a swarm by straying for several years. This I am however convinced depends much on the nature of the bees which form the stock.—When a hive yields more than two swarms, these should uniformly be joined to others that are weak, as from the lateness of the season, and deficiency in number, they will otherwise perish. This junction is easily formed, by inverting at night the hive in which they are, and placing over it the one you intend them to enter. They soon ascend, and apparently, with no opposition from the former possessors, as I have never observed fighting to be a consequence.

It being very universally believed, that two queens cannot live together in the same hive, I have for several days after this forced junction, searched for the murdered queen but never with success. Should the weather for some days after swarming, be unfavorable for the bees going out, they must be fed with care until it clears up, otherwise the young swarm will run a great risk of dying.

Method of obtaining the honey without killing the bees.—The Society will see, from the peculiar structure of the hive, with which I accomplish this object, that I was under the necessity of making it of wood, in place of straw, which, for the reasons before given, I should have preferred.

It consists of two distinct hexagons, one placed above the other. The under is formed of six panes of half inch deal, each measuring ten inches in width, and eight in depth, and covered with a thin board at top. This forms a box that will contain two pecks measure of corn, and which I consider as sufficient for the largest swarm. This is intended for the breeding, as well as winter habitation of the bees. The upper is of the same dimensions and form as the under at bottom; but in order to give it a conical shape, for the more conveniently fixing thereon a coat of straw, the panes at top are only five inches wide, which is also covered by a piece of board. The upper box has a moulding fixed to its under part, which projects about a quarter of an inch, and so exactly embraces the upper part of the lower box, as to join these two firmly together. In the deal which forms the top of the lower box, are cut four oval holes, each one inch wide, and two inches long, through which the bees pass into the upper. This communication, when not wanted, is shut up by a board, which moves on a nail in its centre.—The small pane of glass in the top of the upper box admits of seeing the progress the bees have made in it, without separating it from the lower one.

When the swarm is first put in the lower box the communication is shut with the upper, until the bees have completely filled the lower with combs. The communication is then to be opened when the bees will ascend, and if the season is favorable and the swarm

numerous, they will fill italso, but not until they have completely stocked the lower. By removing the straw covering, and looking through the glass in the upper box, it may be seen what honey has been collected. Should a part or the whole of it be wanted, it will only be necessary carefully to separate the upper from the lower box, and shut the board of communication. The upper box is then to be removed to some distance, and the bees contained in it, driven off, on which they will immediately join their companions in the lower. So soon as the honey is taken from the box, it can be replaced, and if early in the season, the communication opened for making more honey, but if late it must be kept shut until the hive has swarmed next summer. If honey comb early next season is preferred to a swarm, then the communication must be opened about the beginning of June.

All the honey procured in this way is remarkable for its purity, none of the cells having been ever polluted by the hatching of young bees

The greatest advantages however, from this method. are the early and large swarms,—the consequence of not killing the bees.

Conclusion.—I shall conclude this essay with some curious facts in the history of the bee, which presented themselves to my notice during the management of this singular insect.

1st. I have frequently observed, that, during, swarming, the twig or branch which supported the swarm weighing from five to six lbs. or 30,000 bees, had its surface completely covered with the first 300 or 400 that alighted upon it, the remainder of the swarm having their whole weight supported by that small number, which in any other situation, must have torn them to atoms.

2dly. That light is not necessary to the labour of bees, or if it is, it must be in a degree incomprehensible to us. The passage to the abode of the humble bee, is often a zizzag several yards in length, through which it appears impossible for any light to pass

3dly. Bees are entirely directed to their food by smell, as appears from the following experiment. I placed in a tea kettle a cloth, through which I had strained some honey, and after fixing the lid, I put it on the ground about 200 yards to the windward of some hives. I was soon after much amused in seeing a number of bees, following the different windings of the scented breeze, until they reached the spout of the kettle, which they immediately entered.

4thly. Killing the drones by the working bees, when the breeding is at an end, is performed in a singular way, and done by one bee in general. It almost uniformly fixes on the drone at the insertion of the left wing, when it tears with its fangs the muscle which moves the wing so that when thrown from the stand of the hive, it cannot again rise, and is usually killed by the cold of the following night. No stinging or other violences are ever used ; and although the drone is four times the size of her executioner, no attempt at retaliation is ever offered.

MACADAMIZING *versus* STREET PAVING.

It is notorious that, even at the present day, when experience

has demonstrated, as clearly as any proposition in Euclid, that a good, firm, hard road-way may be advantageously made in every tolerable wide street, that doubts and queries are continually started as to its eligibility ! The plan of road making adopted by Mr. McAdam is far from being any visionary scheme, and is intelligible to every man of the most ordinary capacity, who does not wilfully shut his eyes. The principle is simply this: to have the substratum made very nearly level; or just sufficient for the water to drain off; to have the road-material of the hardest stones which can be procured ; to break such stones down to one uniform size, in order that no unequal interstices may be left between them when embedded together ; and to exclude the use of rounded gravel, and the loam, sand, or clay with which they are usually combined. The angular fragments of the broken stones serve so keep them firm in their place, whilst the pulverized matter from the friction on the surface fills up the interstices with the best kind of cement. For want of these angles, it must be obvious that the rounded or diluvial gravel, usually dug from gravel pits, cannot bind firm, but when exposed to wet, acting on the loam, &c. will invariably form a loose or shifting mass, which must be continually liable to fall into holes or inequalities, according to the hardness of the substratum on which it rests.

What has been called McAdam's system (perhaps with some justice, as a compliment to his perseverance in following it up in defiance of all the interested opposition he has experienced,) is in reality nothing more than that of preventing water from gaining access to the materials of the road, and using materials of the very best kind, instead of the compost of sand, clay and chalk, called the road gravel ; or of substituting the softer varieties of limestone or sandstone.

It is, I believe, one of the maxims of Mr. McAdam to recommend the purchase of the best material, at almost any price, as a measure of ultimate economy. It is however very easy to perceive that if any gentleman who happens to have a bed of inferior gravel on his estate, also *happens* to be a trustee or commissioner of turnpikes, that the virtue of such commission would probably transmute the gravel (containing thirty and forty per cent. of loam) into a *better* material for road making than hard limestone, iron sand stone or granite dug from a quarry out of the pale of such commission.

Another advantage, which Mr. McAdam appears to possess over most other road makers, is that of being able to judge where good materials are likely to be obtained, by sinking a certain depth below the soil. And in a case where his hands have been unfettered by any of the local considerations above mentioned, he has converted, what was formerly one of the worst pieces of road between any two opulent cities, into one of the finest in the whole kingdom : I mean the twelve miles between Bath and Bristol. The soft Oolite stone which forms the surface of that district being a miserable material for road making, the height of a hill was reduced ; at the same time an abundance of very hard iron sand stone was procured, equal if not superior, in some respects as granite.

With regard to the superior economy of employing this latter substance for road making in London streets, there can be no doubt; the old paving stones furnishing a surplus quantity for the improved system. But there is probably greater durability and less dust from the use of flint, if that material can be obtained in sufficient quantity. I fully agree with your correspondent Mr. Single, that (if paving the carriage way of our streets be at all necessary) granite is the best material we can use; but I differ from him in his conclusion against the new system applied to narrow streets. He says, "it will not do where there is much traffic, from the frequency of opening the ground in order to repair the water and other pipes." But he surely must admit that excavations can be filled up with the broken stone *a la* McAdam in a fourth part of the time and with half the nuisance to passengers, that attend the job-contract system of paving.

The chief objection to laying gravel instead of pavement in a narrow street, is the ruts which are liable to be cut by carriages following each other in the same track. This however, might be in a great measure avoided, by having a vigilant and civil resident inspector or street keeper, to see the road always kept in good repair; by scraping and moderate watering, and superintending the carriage traffic of the streets.

The progress of this decided improvement to the metropolis is now, in spite of all the opposition of "vested interests" corporate and parochial, making very rapid strides; and I have no doubt the experience of seven years will make us blush for the passive obedience, which has been heretofore conceded by a generous public to the local jurisdiction of a few parish or district dictators. I shall conclude by citing one instance as a proof whether the street pavements of the metropolis were formerly done as well as they might have been.—That fine area Lincoln's-Inn-Fields, instead of being gravelled, is now nearly new paved in a manner vastly superior to any work of that kind previously performed. Should not the opulent inhabitants of that squre erect a statue in honor of McAdam?

AN ESSAY ON HONEY-DEW.

My design in this essay is to give a brief statement of certain facts relative to the appearance of the honey-dew, in Carolina, which appear to militate against the received theories of its formation; together with a concise view of the opinions of ancient and modern writers with regard to this peculiar substance.

The production of the honey-dew is influenced by the season of the year, and evidently by the state of the atmosphere. In Carolina it most frequently appears in the months of May or June, during a long absence of rain, and after a succession of warm days alternating with cool nights. Early in the morning it is found on the leaves of plants, grasses, &c. of the consistence of diluted honey, transparent, and resembling, in taste, the sirup of refined sugar; the viscidity of it increases with the heat of the sun, and about 10 or 11 o'clock it ceases to be fluid, giving to the leaves a shining and glossy appearance.

Situation also appears to influence the production of the honey-dew. I have observed it in the greatest abundance near the margins of stagnant marshes, ponds, and savannahs. In the district of Marion, South Carolina, is a morass extending 15 or 16 miles in length, and one or two in breadth; it contains no trees of considerable magnitude except the cypress, few perennial shrubs, but abounds with annual succulent aquatic plants, and grasses. Near the edges of this morass, during the season and state of the atmosphere alluded to, the honey-dew is produced in such quantities as to moisten every shrub, and to cover the grass. Horses which feed at large in the vicinity of the morass, may be found at 8 or 9 o'clock in the morning with their manes and tails agglutinated to a mass with this substance. The particles of pine leaves and grasses, carbonated by the fires which sometimes ravage extensive tracts of country in March and April, are frequently observed cemented into large masses, and in situations where, apparently, the honey-dew could not have dropped from overshadowing trees. Swarms of bees inhabit almost every excavated tree, and from their honey the poor inhabitants of this steril region derive no inconsiderable support.

Similar phenomena relative to the honey-dew have been observed on the eastern continent, and recorded both by writers of remote antiquity and of modern date.

It is also probable that it was from having attentively observed the honey-dew, that Aristotle, the father of Natural History, was led to hazard the general proposition, (*Lib. V. Cap. XIX. Hist Animal.*)

Venegas, in his history of California, says, that "Father Piccolo observes that in the months of April, May, and June, there falls with the dew a kind of manna which becomes inspissated on the leaves of trees. He adds, that he tasted it, and though not so white as sugar, it had all the sweetness of it. The good Father, according to the common opinion, speaks as if the manna dropped from the sky."

According to Dr. Darwin, precisely similar circumstances attend the appearance of the honey-dew in England as in Carolina. He remarks that he saw it in the greatest quantity dropping from the leaves of nut-trees which grew near the edges of a pond. Duhamel and Reneaume observed it in a hot and dry season, dropping from the willow, the maple, and the sycamore; and the latter adds, that the bees collected it as eagerly as common honey.

That the honey-dew was formed in the atmosphere, and descended with the dew, seems to have been the opinion of naturalists from time immemorial; and Pliny, Columella, and others, supposed that the labour of bees in the formation of honey extended no farther than to collect it from the leaves and nectaries of plants, to digest and deposite it in their waxen cells.

The savage Californian believes that it descends from heaven, and to this opinion he is probably influenced alike by observation and superstition.

The equally unenlightened inhabitants in the vicinity of the above

mentioned morass, assert with confidence, that, during the prevalence of the honey, an attentive observer may perceive at sun rise, the honey-dew falling in long or *hair-like* particles.

A belief, so widely diffused, and embraced by persons ignorant of the existence of each other, would seem to be grounded in truth; but to dissent from popular opinion, and to explain phenomena by causes the least obvious, has ever been a fashionable maxim among philosophers.

Sauvages, of Montpelier, deduced from actual observation, that the production called honey-dew was of two kinds, the one an exudation from the vegetable, and the other the excrement of a species of aphis, which this insect acquired by piercing the sap vessels of the leaf, and voided almost unchanged on the leaves and ground beneath.

That a substance similar to the honey-dew in some respects is produced from the latter cause, no person of observation will hesitate to affirm; but Darwin is very unwilling to admit that it is the source of the honey-dew which he describes; and such a cause can never be assigned to that which appears in Carolina.

Darwin assures us that in Europe, the aphis is to be seen in its most perfect state, long before the honey-dew is produced, and continues some months after it has disappeared, and that the aphis frequently abounds much to the injury of trees, without the honey-dew being produced.

The product of the aphis is generally found on the upper surfaces of those leaves, on which it could have fallen from the lower surfaces of impending leaves, this part of the leaf being generally occupied by the aphis; but Darwin found the honey-dew dropping only from the upper surfaces of those leaves most superficial, and exposed to the sun, while those concealed had little or none of it. From observation, I can assert that the objection holds equally good in Carolina.

The aphis, from its ravages on fruit trees and garden plants, is an insect well known in Carolina; but its appearance in sufficient numbers, cotemporaneously with the production of the honey-dew, will never warrant the adoption of Sauvage's theory. But why should the labours of the aphis be influenced by the state of the atmosphere? Darwin confidently asserts, that the honey-dew disappeared on a change of the weather. Should it be replied, that the honey-dew found on the carbonated particles above mentioned, might have been wafted as it fell from tall trees, I would reply, that these trees must have been pine, from which no one will assert that the aphis could procure sap.

Dr. Darwin, after stating many plausible objections to the opinion of the honey-dew being the product of the aphis, suggests the more probable and long-fostered theory of vegetable exudation. He ascribes it to a retrograde action of the lymphatics of plants, and fancifully compares it to *diabetes mellitus*; but as this ingenious speculatist himself doubts the validity of this explanation, I hope I shall not incur the imputation of presumption when I state a few objections.

He asserts, from observation, and on the authority of Duhamel, that those leaves on which much honey-dew is found, die in a short time. Death he ascribes to debility from excessive excitement, and to the quantity of fluid exuded. This fact has been long since remarked with regard to the honey-dew in Carolina, but, I think, admits of a more probable explanation. The upper surfaces of the leaves of a plant are supposed to constitute its organs of respiration; hence oil or varnish, spread on a leaf, will cause its death, for the same reason that a want of a due supply of atmospheric air is fatal to animal life. The honey-dew, on being desiccated by the heat of the sun, must resemble varnish, and would afford an equal obstacle to vegetable respiration.

Darwin alleges the proximate cause of exudation to be the too great stimulus of heat; but informs us he saw it in the greatest quantities, and in the most fluid state, early in the morning, when, according to the known *phenomena* of life, excitement should be in the lowest degree.

It would be rational to conclude that were the honey-dew a vegetable production, it would more or less partake of the general properties of the plant from which it exudes. Professor Barton has ingeniously ascribed the narcotic quality of honey, made in particular situations, to the vicinity of some species of kalmia and the datura stramonium. The exudation from the manna ash is a well-known purgative. The ocymum salinum is said to exude the common salt, and the nectarial honey of a particular species of bignonia has been more than once known to cause a temporary suspension of the powers of vision. But the honey-dew is equally sweet and innocuous wherever it is found. This assertion I venture to make, from having lived near ponds where it was often found in great abundance, and where, from the gratification it afforded to my taste, many of the playful hours of my childhood have been spent in collecting it. The bee, the wasp, and the ant, appeared to sip it, with equal avidity, from the astringent leaves of the styraciflua, the pungent and aromatic laurus, and the bitter cephalanthus.

Since, then, it would appear that the honey-dew originates neither in the labour of the aphis, nor in vegetable exudation, it remains to develope the true source. Towards the performance of this task I can do little more than hazard a few vague conjectures. I will proceed, however, to the statement of a natural process, coeval with the appearance of the honey-dew, not merely as a foundation on which the fanciful theorist may raise an aerial superstructure, but which appears, in the view of candid observation, to claim a connexion with the subject of this essay. The ponds and marshes near which this substance is produced abound with the cat's tail, nymphæ, grasses, and succulent plants. Vegetable life is not extinguished in these plants till late in autumn, or early in winter, when the stalks fall, and are covered with water, by which these ponds are overflowed until the succeeding spring. Hence putrefaction is at rest until the vernal or summer heats are sufficient to evaporate the waters of the ponds.

That putrefaction does not occur previous to this period I infer from two circumstances: 1st. That cattle late in winter and early in the spring are seen wading into the waters to collect these plants as food, and often are destroyed by drinking in the mud; 2dly.—That the evaporation of ponds in the spring is succeeded by the usual effect of the miasmata of vegetable putrefaction.

If, then, the conjecture of Darwin be true, that the first stage of vegetable decomposition is a saccharine process, (as in the conversion of barley into malt,) here is a source of the honey-dew, and also an explanation of the contiguity of this production to marshes and ponds. I do not insinuate that putrefaction furnishes a proper combination of the ingredients to the honey-dew, but a substance capable of evaporation, (as the nectarial honey of plants,) and which condensation might render more perfect. A fact which would seem to favour this opinion is, that bees are constantly seen on the mud, on putrefying vegetable masses, at the edges of ponds; and their flight from these places directs the bee hunters to their common repository. Nor should we be startled at the idea of sugar from such a putrefactive source, when chemistry leads us to expect from the same source other compounds far more complicated.

The opinion of the formation of honey from putrefaction, however unphilosophical, is far from being novel. From holy writ we learn that Samson procured it from the carcass of a lion which he had slain; and Virgil tells us that Aristæus renovated his bees from the putrefying carcasses of oxen.

Whether, however, the opinion be false or true, I submit it, with due deference, to the judgment of the philosophic world.

A Naturalist.

ON HORSE DEALING.

The mysteries of this noble science are so interesting, and some of them so entertaining, that I have no doubt a detail of them will be highly acceptable to your readers. The worthiest who take up this honourable profession may be divided into two classes—the regular and the irregular. The first consists of those who are brought up in it by way of a livelihood; the latter, of those who, pursue the sports of the field, and who style themselves gentlemen.

Which of these two parties are the greatest proficients in their calling, it would be no easy matter to decide; but the skill and dexterity manifested by both is undoubtedly a subject for admiration. The regular dealer, whose interest it is to buy and sell sound horses if he can, seldom takes any other advantage than what he can derive from demanding an extraordinary profit. He buys a horse to day, and sells him to-morrow; and is obliged to warrant him sound—of which fact he has no other means of judging than by putting the animal to the usual tests, but he can know little of the horse's qualities in so short a length of time, and consequently is not so responsible on that head, as the gentleman-dealer who sells a horse that he has had in his possession a twelvemonth, and with whose defects he must of course be well acquainted; and this he will not scruple to do even to his best friend.

If the regular dealer shews a horse for sale, he avails himself of the customary aids of ginger, whipcord, and one or two other little expedients, such as pushing up the front of the bridle as high as it will go, in order to hide the lower part of the ears, and thereby make them appear smaller than they really are. The horse is then placed by the side of a wall, with his fore legs on a spot of raised ground, perhaps half a foot higher than that upon which the spectator stands, so that the horse appears to be nearly a hand higher than he really is. He is then run up and down the ride, with his head held as high as possible; and the whip at his haunches, producing such a state of agitation, as completely to disguise his natural bad action, and even to conceal any tenderness in his legs and feet. The next proceeding is for the dealer's man to mount him, and here the same skill and dexterity are brought into play. As soon as he is mounted, the rider holds his hands as low as he can, so, that the reins may intersect a part of the withers—thus increasing the apparent length of the neck. During the progress of these operations the dealer is not idle, but runs over the whole catalogue of perfections that a horse is capable of possessing; and this with such perseverance, as frequently to make the purchaser believe that the animal is a perfect nonpareil. Thus, if the horse has any particular bad point about him, the dealer takes care to praise it, well knowing that the good points will speak for themselves. I remember some years ago, seeing an old dealer who was paralytic, & with one leg in the grave, shewing a horse to a greenhorn; when the animal happening to stumble and nearly fall in being run up the ride, the old fellow)with his head and hands shaking like a Chinese figure) immediately exclaimed, "Playful rogue ! playful rogue !" thus proving true to his calling to the last hour of his existence. The branch of horse dealing which is most worthy of attention, is that of horses advertised for sale. These, in the slang phrase, are called "*plants*;" that is, the horse is placed at some private stable for the purpose of sale. He is then advertised, and all his wonderful properties detailed; and generally concluding with stating, that he would suit any elderly or timid gentleman, or carry a lady, although he would infallibly break their necks the first time they mounted him Should any person be caught by the advertisement, and apply for an inspection of the horse, the first person he sees is a fellow drest up for the occasion in a groom's jacket, who is appointed to shew the animal. But before he brings him out of the stable, another hero, drest up in the same way, enters, and commences the following dialogue: "Why, Tom, how happens your master to part with this horse; he is the best he has in his stud." "Ah," replies Tom, "I wonder at it ! I have often told him he is the best he has got, but master's whimsical, and is fond of chopping and changings." The inexperienced purchaser swallows all this as gospel, buys the horse on a warranty which the seller makes no scruple to give, and most probably discovers, on the very next day, that he has been most egregiously cheated. The unfortunate dupe goes to the seller to return the horse, and generally finds that he has marched off in the night without beat of drum, or

else (if he has the impudence to stand his ground) he offers to take the horse back, and gives the buyer a promissory note, or some o ther security of equal value, so that the purchaser may generally take leave both of his horse and his m oney; and this is a true description of the advertising system in nine instances out of ten.

One of the best devised plans of this sort was carried into effect some time ago, at one of the great Repositories in London. At these places it is the rule to allow but three days for returning a horse as unsound. A horse, not thoroughly sound, was sent there for sale, warranted sound, and sold at the regular auction. The seller went to the person who bought him, as a stanger, and pretending to lament that he had not been in time to buy the horse for his master, asked him if he would sell him; upon which the other replied that he had no objection, if he got a profit. The first party then said he would buy him, but he must first write to his master who lived at some distance in the country, and that he could not have an answer in less than three days, but if he would keep him for that length of time he would be sure to take him. In consequence of this representation, the horse was kept in the stable until the three days, (the period allowed for returning) expired, when the unfortunate purchaser discovered that he had been cheated, when it was too late to obtain the remedy; the successful knave bidding him defiance, and laughing

Before I quit the subject of Repositories, I shall take occasion to notice a practice which is become very prevalent at these places.—About half a dozen or more secondrate dealers, when a horse is brought up to the desk, immediately surround him (if they think he is worth the buying,) and completely shut out the rest of the bystanders from either seeing or examining him. One of them then addresses the auctioneer, by asking, what is the price of the *screw*, meaning a lame one, or the *bull*, meaning a roarer. One or two questions of this sort effectually deters any of the spectators from bidding, under the idea that the animal is really effected in the way which these worthies insinuate: and the consequence is, that the latter buy him at their own price, and afterwards divide the spoil. The only way to obviate this unfair mode of proceeding, is to give in the lowest price to the auctioneer, with directions not to let the horse go for less.

The practice of attempting to make an aged horse appear younger than he is, and which is called "bishopping," is performed in the following manner:—an artificial cavity is made in the lower corner tooth, with an engraving tool; a hot iron is then applied to make it black in imitation of the mark which is seen at seven years old; but an experienced person will readily discover the difference between this and the natural mark, by the yellow edge which surrounds the black mark, and which is occasioned by the hot iron drawing the oil of the tooth to the surface. There is also a manifest difference in the form and appearance of the best of the teeth, which become more horizontal; the upper teeth projecting beyond the under teeth, and the hinder part of the upper corner tooth forming an angle over the tooth immediately under it. These are character-

istics of age, which all the skill and dexterity of these worthy artists can neither alter nor remove. The ridges of the palate also become smoother as the horse grows older. The foregoing are the tricks of the regular second-rate dealers, and it is but fair to state that the gentlemen dealers seldom descend to the same practice.—They however contrive to escape responsibility when they sell a doubtful horse, by saying it is not their custom to warrant a horse sound, from fear of being involved in disputes. It is true this in some degree reduces the price of the horse if sold to a person who has not much confidence in patrician honesty, but there are always young sportsmen enough to be found, who seldom consider the result, provided they can show off with a new nag.

There are several of the *non-warranting* gentlemen who are hangers on to every Hunt in the kingdom, and who contrive to pick up a tolerable livelihood by accommodating young Nimrods with seasoned hunters, and by setting their necks, every time they go out, against a hundred guineas. I remember a gelding that was sold in the Warwickshire Hunt for 700 guineas: he was eleven or twelve years old, and had been much worked. The purchaser had about three days' hunting out of him, and sold him back again to the original owner for 130 guineas; and this, extraordinary as it may appear, is by no means a singular instance of the kind. Before I conclude this article, I shall present you with the vocabulary of the dealers for the edification and amusement of your readers:—*A Horse dealer*, a coper; *a Gunner*, a horse blind of one eye; *a Woodman*, a crib biter; *a Bull*, a roarer; *a Piper*, broken winded; *a Scraw*, lame; *Snitch*, the glanders; *a Roman*, hurt in the back; *a Jack*, a spavin.

By the help of this vocabulary these worthies can carry on a conversation amongst themselves, as unintelligible to the bye-standers as Greek or Hebrew. *European Magazine.*

NEW METHOD OF PREPARING QUILLS.

The following is the manner in which Mr. Scholz of Vienna, proceeds in the preparation of quills for writing, by means of which he renders them more durable, and even superior to the best Hamburg quills. For this purpose he makes use of a kettle, into which he pours common water, so as to occupy the fourth of its capacity; he then suspends a certain quantity of feathers perpendicularly, the barrel lowermost, and so placed, as that its extremity only may touch the surface of the water; he then covers the kettle with a lid properly adjusted, boils the water, and keeps the feathers four hours in this vapour bath. By means of this process he frees them of their fatty parts, and renders them soft and transparent. On the following day after having scraped them with the blade, and then rubbed them with a bit of cloth, he exposes them to a moderate heat. By the day after, they are perfectly hard and transparent, without; however, having the inconvenience of splitting so easily.

There is a factory in Delaware Co. Pa. which, when completed, will, it is said, turn out thirty thousand yards of cotton cloth a week.

PAPER.

The materials on which mankind have contrived to write their sentiments in different countries, have been extremely various.—The most ancient; perhaps, were stone and plates of metal. Tablets of wood, particularly of the cedar wood, were afterwards used; and these were again followed by tablets covered with wax, which were written on according to the fashion of the time, either with iron bodkins, the bones of birds, or reeds cut into the form of pens.

At length the papyrus of Egypt was invented, which not only gave a great facility to the art of writing, but was a portable material. It was formed of thin coats stripped from the reed which grows upon the banks of the Nile. The date of its discovery and the date of its disuse have been equally disputed. Nor is it yet completely ascertained whether its first application may be ascribed to an earlier or later date than the conquest of Egypt by the Macedonians.

Parchment was the next invention; originating in a country where no such material as the papyrus reed could be discovered; and it has been found at once so durable and useful that it is still employed upon important occasions in every European country.

The art of making paper, such as we now see it, was a late discovery: and its first material was cotton. The linen paper which is now in use, is supposed to have followed the discovery. They are both dated by the generality of writers at the eleventh or twelfth century, though the honour of the discovery is claimed not only by different but distant nations.

The first book which was printed on paper, manufactured in England, came out without a date, about 1495 or 1496—though for a long while afterwards it was principally brought from abroad.

The first paper-mill in England was established about 1590 at Dartford in Kent, by one Spilman, who died in 1607.

THE SPRING OF YOUTH.

Extract from a Sermon delivered from the Text "We must needs die."

"Youth is the season in which piety should be cultivated, and good habits formed. The future character and happiness of life depend on the discipline of this important period. Neglect not, then, the advantages you enjoy, nor allow your passions to mislead you from the path of duty. The slightest observation will convince you that there is an essential difference between right and wrong, between virtue and vice. Imprint this difference on your memory, and strengthen the impression by observation on the conduct and fate of your acquaintance. You will find those who started in life with equal advantages experience very unequal success, and that whilst some by their vicious conduct have involved themselves in disgrace and ruin, others, by their good principles and by the regularity of their deportment, have obtained all the blessings which

this world can afford, and have made the best preparation for the next.

"Whatever may be your pursuit, whether commercial, professional, or scientific, be assured that good principles, and good habits, are indispensably necessary to your success. However profligate may be the manners of the world, yet piety and virtue are always shure to meet with respect; and even licentious men look with veneration on those religious principles and moral qualities, which they have not firmness enough to cultivate themselves. They give vigor to the mind, and dignity to the character. They lead to respectability and distinction, and by the improvement of the mind and of the heart, form those dispositions which best qualify men for the kingdom of heaven.

"Waste not the *season of youth* in levity and indolence, which you cannot long indulge without the sacrifice of innocence. The formation of your future character, and consequently of your happiness, depends upon your conduct during this important period. As you now sow, so will you hereafter reap. Your minds are now pliant and open to every impression; and by remembering your Creator in the days of your youth, and by industry, and application and good conduct, you will lay a broad and deep foundation for future and eternal happiness.

"Consider how many young men have entered upon life with the fairest prospects, all of which have been blasted by *bad conduct*, by *indolence* and *profligacy*, and *extravigance*. By a kind of moral suicide, they have thrown away all their advantages, and degraded themselves from happiness and respectability to misery and contempt.

"The obligations which you owe your parents can be repaid only by your good conduct, by following their advice and respecting their commands. Entertain due respect for those who are your superiors in knowledge and in years. Carefully avoid an overweening conceit of your own abilities, and a confident presumption in the rectitude of your own judgment. Your opinion both of men and things, be assured, will greatly alter as you advance in life, and many objects of your present admiration, will appear to you hereafter in a very different point of view. Be careful then how you form opinions, which at some future period, you may be compelled to retract, and which in the mean time may lead you into serious difficulties.

"It must be acknowledged, at the same time, that many errors of the young *proceed from the misconduct of parents*. This weak vanity, or criminal indulgence, conspire with the natural frowardness of their children to insure their ruin. Ere they leave the *boy*, they are permitted to assume the *vices* of the *man!* By a course of irregular pursuits, they anticipate old age and accelerate the approach of death, for which they have made no preparation. Guard then against these dangers. By a pious and virtuous life, be always prepared for death, you know not how soon he may approach.—No season of life is secure from his attacks. No confidence can be placed in youth, strength or beauty, for "we must needs die."